# Cultural Political Economy Meets Global Production Networks: A Productive Meeting?

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## Introduction

The starting point for this paper is the conclusion reached by Neil Coe and Martin Hess (Coe and Hess, 2007, 22) in their discussion of Global Production Networks (hereafter GPNs) that:

"…there is a clear need to think about ways of integrating the material as well as the socio-cultural dimensions of global network development. In other words, what we are looking for is a relational network approach that neither under-socialises nor over-socialises current developments in the global economy (Hess and Yeung, 2006). This, we feel, moves us towards a 'cultural political economy' of GPNs, that is capable of integrating both the system-world and life-world aspects of global networks and their related developmental outcomes while at the same time being aware of the pitfalls of conceptual 'imperialism', 'methodological nationalism (Pries, 2005) and problematic binaries like global-local and culture-economy (Gregson et al, 2001)".

In this paper, I want to take up this challenge and explore some of the implications of pursuing a cultural political economy' (CPE) approach to the analysis of GPNs, understanding production to encompass the whole gamut of activities comprising the circuit of production – that is, the production, exchange and consumption in various ways of what is produced, intentionally and unintentionally. GPNs can be seen as constituted via a variety of flows (of capital in various forms such as commodities and money, knowledge and people) between a variety of nodes, sites and spaces (of production, exchange and consumption), with varying governance arrangements, both multi-scalar (supra-national, national, regional and urban) and non-scalar networked forms of governance. As these are *Global* Production Networks these nodes and the flows linking them are, by definition, distributed around the globe, albeit unevenly. In pursuing the implications of exploring GPNs through the lens of CPE or, more ambitiously, conjoining GPNs with CPE, I wish to both acknowledge the innovative work of Jessop and Sum (2006) and Sum and Jessop (2008) but also to begin to go beyond this and take up the challenge posed by Coe and Hess to integrate serious consideration of the

material into CPE. In their approach to CPE Jessop and Sum consider political-economic and semiotic dimensions to great effect in a novel and sophisticated way (Hudson, 2007a). Furthermore, they integrate the treatment of time and space into their analysis, recognising the emergent properties of the complex economy, its development on an open-ended though still path dependent trajectory, and the spatiality of the economy in terms of its different sites and spaces and the connections between them. However, critically, they fail to engage seriously enough with the materiality of the economy (beyond the recognition that the production of use values necessarily involves people working on and with elements of the natural world and matter of various sorts and transforming them to create value) and so with the relations between the material, semiotic and political-economic. These links need to be systematically integrated into a more rounded CPE.

I have argued elsewhere that a CPE perspective must involve understanding 'the economy' in terms of three registers, each constituted through a variety of circuits and (non-linear) flows linking a variety of sites and spaces (see Hudson 2001 and 2005 for some preliminary consideration of these issues). The first of these is political-economic, encompassing labour processes as well as processes of value creation, exchange and realisation, in addition to the consumption of commodities. The second is semiotic, relating to flows of knowledge and information and to the culturally-endowed meanings that things come to acquire. The third is material, conceptualising the economy in terms of materials transformations - biological, chemical and physical - as well as flows of energy, matter and materials, drawing here on literatures in materials and natural sciences and reading these through the perspectives of political-economy and semiotics drawn from the social sciences. Finally, it is important to emphasise the relations between these three registers and the flows and spaces through which they are co-constituted and the inter-relationships among them (see Hudson, 2004). For example, the issue of whether commodities cease to have use values and become 'wastes' or are re-valorised and take on new use values depends inter alia, on issues of meaning and processes of re-valuation. The identification of the three registers of a CPE approach implies the need to think of three sorts of circuits and the spaces and sites through which they flow and which they help constitute, as well as the relationships among and co-constitution of these flows in terms of the (re)production of GPNs. In addition, as well as the dangers identified by Coe and Hess, it is vital to avoid linear conceptions of flows and to acknowledge the complexity of the economy and of GPNs, the circuits and feedbacks loops that give rise to emergent properties[1].

[1] It became clear in discussions with Nicky Gregson in the context of a major ESRC-funded project "The Waste of the World" (http://www.thewasteoftheworld.org/) in which we are both involved that the metaphor of the circuit requires some further unpacking and elaboration, especially in the context of conceptualising the economy as a process with emergent properties. As a metaphor, 'circuit' speaks to two rather different aspects of connectivity and flow. First, it draws upon the notion of electrical circuits, with flows channelled between nodes via switching points, with the end point different to the origin, indicative of the complexity of the economy and its capacity to produce emergent effects – with such moments of emergence marked, perhaps, by the circuit blowing a fuse and subsequently being re-configured in a new way. Circuits and feedbacks loops may, then, under certain circumstances, give rise to emergent properties rather than simply reproducing existing

In the remainder of this paper I will focus upon some aspects of the political-economic, semiotic and material registers of CPE with the intention of deepening understanding of GPNs. The identification of these three registers implies the need to think through the relationships among and co-constitution of the various sorts of circuits, flows and transformations encompassed by them, as well as giving consideration to the spaces and sites through which they pass and which they help constitute. Of necessity this will be a partial and selective coverage but one that will, I hope, nonetheless, realise its intended effects and help deepen understanding of the concept of GPNs.

## Political-economy and circuits of value

In the course of single day, we – that is, those of us in the more developed parts of the global political-economy – typically come into contact with a more or less sophisticated range of artefacts and material goods and objects that underpin our daily lives and, indeed, make them possible. Automobiles, frozen foodstuffs, mobile 'phones, shirts and shoes, the PC on which I'm writing this - the list is long, if not quite endless. Often, much of the time, we take their availability and presence for granted, even when we occasionally recall that many of them were produced on the other side of the world in China or parts of south east Asia. How do they come to be produced, acquire value and find their way to us? How can we begin to understand these processes of production, value creation and valuation?

As a starting point in seeking answers to these questions, it is critical to recognise the existence of different concepts of value and processes of valuation and the articulation and relations between different socio-economic systems (or social formations) grounded in different concepts of value (Hudson and Lee, forthcoming). At a rather high level of abstraction and generalisation, all forms of economy and society may conceptualised as reproduced via continuous flows of value as products circulate between people, times and places. These flows of value, moving through the sequence of production, exchange and consumption, are both constituted in and help constitute circuits of social reproduction. Value can be thought of as generated through relations and things which, via the material and social

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properties and relations. In short, feedback does not necessarily imply a return to the same starting point or state; it may do, but it need not do even if this was the intention of those managing the process precisely because of the endless capacity of material to exceed or escape the frame established by the process of transformation itself. Secondly, it invokes the idea of circuits as recursive flows, with material of various sorts flowing though a variety of qualitative transformations and returning to its original qualitative starting form, as in the circuits of capital. However, this does not necessarily mean a return to the same starting point as these are flows in real time and may well involve a quantitative augmentation of value as well as physical transformation of material. It is important to note that some material transformations produce irreversible transformative effects so that return to the original qualitative state of matter is impossible. As this last point suggests the process of value creation and the creation of exchange and use values may well be decisively shaped by the possibilities – and limitations - of material transformation.

practices of the economy (production, exchange and consumption), come to be regarded as socially useful, helpful, uplifting or, more narrowly but generally, as fundamental to everyday life going on "as normal". These flows encompass the exchange of value embodied in products and may involve the exchange of money for work or the capacity to work, which could lead to an augmentation of future production and/or consumption. Social and material survival requires that circuits of social reproduction deliver such flows of value, in appropriate quantities, distributions, and time/spaces. In turn, successfully maintaining such circuits necessarily involves often-subtle processes of regulation and complex intersections of material and social relationships and practices in the formation and definition of value. The material and the social are intimately related via circuits of co-evolution and co-determination: "the significance of any single moment of economic activity begins to make sense in material terms only in the context of circuits of material reproduction" (Lee, 2002, 336). Material relations, imbued with social meaning, involve the practice and co-ordination of circuits of production, exchange and consumption (and in a later section of the paper I return to issues of materiality from a rather different perspective). Thus social relations, variable over time/space, define the meanings of material practices. These relationships and meanings may become hegemonic, voluntarily, often unquestioningly, accepted and confer a sense of social order via the recurrent practices of the economy. In other circumstances, maintaining social reproduction requires deployment of power within circuits of authority, control and direction to shape economic processes and circuits of material practices (and, viewed historically, hegemony has often been preceded by domination). The substantive content and meaning of conceptions of value are therefore spatio-temporally specific. What is seen as valuable in one socio-spatial context may not be so in another. The origins of these differences lie different modes of socio-economic organisation and are expressed in different ways of conceptualising and theorising "the economy".

While recognising that contemporary capitalist economies are constituted via a variety of social relations and their associated concepts of value, however, it is equally important to acknowledge the dominance of capitalist concepts of value in the contemporary world, as this is what defines these economies *as* capitalist. Recognising that there are multiple circuits of capital (for example, a primary circuit constituted via co-existing circuits of commodity, money and industrial capital, as well as secondary and tertiary circuits: Harvey, 1982; Hudson, 2005, Chapter 2), I will take the (admittedly over-simplified) case of the circuit of industrial capital and the processes and regulatory mechanisms by which this improbable process of the circulation of capital is routinely reproduced to develop this point. Mainstream capitalist production is centred upon commodity production, the production of things with the intention of sale in markets, and value expansion via the production and realisation of surplus-value. Consider the production of that iconic commodity of mass produced modernity, the automobile – a result of workers assembling a huge variety of materials and components embodying a vast range of materials (various metals, glass, plastics, hydrocarbons, rubber, wood and so on), fixed in a particular order to create the finished product. More generally, and abstractly, capital brings together constant and variable capital - the necessary

equipment, components and materials and labour - so that in the moment of production commodities are created that embody greater value than the value laid out to purchase the inputs to the production process. This is a consequence of the unique attributes of labour-power as a fictitious commodity, since people create surplus-value in excess of the value equivalent of the wages that they are paid for going to work (see Hudson, 2001). Consequently, capitalist production is simultaneously a labour process based upon the exploitation of labour (and so one that encompasses the life-world at work of those engaged in production and waged work more generally), a process of valorisation and value expansion and a process of material transformation[2], as a result of which commodities simultaneously possess the properties of use values and exchange values. This form of organising production is based on the class structural separation of, and dialectical relation between, capital and labour within the abstract conceptual space defined by the capitalist mode of production.

In actually existing capitalisms, or capitalist social formations, these social relations are extended and stretched over space and imposed upon people to define the character of social reproduction – although not without contestation and resistance – by commercial, industrial and financial institutions operating over multiple and mutually constitutive spatial scales from the very local to the global. Space in general and particular spaces are thus integral to the biography of commodities, which move between various sites of production, exchange and consumption as they flow around and beyond the circuits of capital, an insight that has been powerfully developed by the perspectives of global commodity chains, global value chains and most recently, GPNs. In this sense, to conceptualise production in terms of GPNs is to do no more – and no less - than to recognise the practical realities of capitalist economies.

Commercial, industrial and financial institutions define highly focused and specific notions of value directed at profitability and accumulation and use them to constrain and direct capitalist circuits of social reproduction – that is, the expansion of capital and the socio-spatial extension (for example, in the contemporary period, to China and other emerging economies) and deepening (in existing centres of capitalism) of capitalist social relationships as these penetrate realms from which they were previously excluded such as the body, the family and the home (for example, see Baumann, 2005, 81-115). In this way, the social and material dimensions of social reproduction are mutually formative and inseparable and take a specific form within the parameters of capitalist social relationships. For example, in the formal capitalist economy value can be defined as market price (as in neo-classical and mainstream orthodox theories), or as socially necessary labour time (as in the orthodox Marxian labour theory of value or as in the value theory of labour: Elson, 1978)[3]. Thus, in marked contrast to mainstream and neo-classical conceptions, Marxian analyses recognise in their conceptualisation of flows of value and circuits of capital in the specific context of the formal

[2] Although as I shall argue this aspect of materials transformation has been neglected in much of political-economy and this is a neglect that requires rectification.

[3] Note that the socially-necessary is context dependent and specific and as such variable over time/space rather than this being an essentialised and invariant quantity.

capitalist economy, that values and prices are not synonymous and that the relationships between them need to be considered. Not least this is because of the characteristics of money and monetary systems and the disciplining power of money on the practices and developmental trajectories of economies.

The routine performance of the social relationships of production, exchange and consumption and the day-to-day conduct and market transactions of a capitalist economy (such as declaring profits, paying wages or buying food and clothing) are conducted in terms of prices, not values. Economic agents freely enter into market relations mediated by monetary prices. Money thus serves as both a medium of exchange and a measure of value, though not one that equates to values defined in terms of socially necessary labour time (and the issue of how best to conceptualise relations between values and prices has become a matter of some, as yet unresolved and probably irresolvable, debate). What is clear is that monetary price is always a slippery, imperfect and unreliable re presentation of value. Discrepancies between supply and demand in markets result in commodities being exchanged at prices that diverge from their values. As production conditions diverge from social and technical averages, the amounts of labour time embodied in commodities deviate from the socially necessary amount that defines the value of a commodity. Commodities thus contain varying amounts of labour time but are sold at the same market price while money prices typically diverge from exchange values. As a result, there is a redistributive flow of value between spaces, sectors and companies via the processes of competition. This redistribution is critically important in relation to the systemic dynamism of capitalist economies, to processes of “creative destruction” as firms seek competitive advantage via innovation and revolutionising the what, how and where of production, and so to their historical geographies of production and uneven development and the current configuration of GPNs.

Beyond the confines of the formal capitalist economy and theorisations of it but within the broader confines of capitalism and their theorisation, there are alternative conceptions of value in terms of labour time (as in Local Exchange Trading Systems, or LETS), or in terms of the intrinsic worth of things or affective dimensions such as friendship, love and respect – not all of which can be represented in terms of price. Indeed, there are things that people value that are, quite literally, priceless. It is impossible to put a price upon them because their value cannot be translated into a quantitative monetary metric. Such alternative conceptions of value influence economic practices within the spaces of mainstream economies of capitalism, while they also permeate the interstices that capital has abandoned or never found sufficiently attractive, or those areas from which, in a given time/space, it is prohibited by regulation or morality, custom and the force of tradition. It is also important to emphasise that these alternative conceptions of value often underpin the reproduction of the circuits of capital that constitute the formal economy (for example, through the reproduction of labour-power via domestic labour and the life-world of the home as class and non-class relations become entwined in particular ways) while in turn for many people the successful reproduction of their daily lives depends upon their capacity to purchase and

consume commodities (and so the entanglement of their life-world in spaces of exchange and consumption). Similarly, circuits of capital are often augmented by processes of accumulation via dispossession (seeing this as an enduring feature of the process of accumulation rather than a transitory phase in the early history of capitalism: for example, see Wood, 2002), the appropriation of value from spaces of non-capitalist economic practices and values and their translation into circuits of capital.

The moment of exchange is a critical one as commodities move from the realm of exchange value to use value and the value (including the surplus-value) embodied in them is realised in monetary form and once again becomes money capital, and as such available to be thrown into the circulation process and advanced as capital for re-investment. The sale of commodities thus forms a decisive moment in the circuit of capital. Some commodities are sold to form inputs to other processes of production and the value embodied in them is transferred to new commodities. This 'productive consumption' is expressed in relations between firms and supply chains, often stretching around the world as a consequence of the production strategies of the TNCs and MNCs that construct and drive GPNs. For those commodities sold for final consumption, subsequent processes of consumption ensure that commodities move from the realm of exchange to that of use values. At the same time, they move from the life-worlds and workplaces of those that produced them and become part of the material life worlds of those who consume them and are otherwise affected by their consumption. Often – increasingly – these life-worlds are widely separated, to be found in distant parts of the world, as GPNs involve segmenting the global economy into discrete spaces of production, exchange and consumption for a given commodity. In addition, the subsequent post-sale life of things may, at the end of their useful lives to their initial purchasers or users, lead to their re-valorisation and use by others or to their categorisation as 'wasted' and no longer things with a use value (a point again taken up below in more detail).

In summary, the asymmetrical interdependencies between both people, as a result of their socio-spatial positionality, and concepts of value emphasise that capitalist economies involve complex and multiple flows of values, underlain by different conceptions of value. More generally, the fundamental point within a CPE approach is that conceptions and circuitous flows of value vary with the form and type of economic organisations under consideration and the positionality of those constructing the category of value. This positionality, especially in terms of class relations, in turn is pivotal in determining which concepts of value become dominant, and the ways in which circuits of value become constructed. In similar fashion, relationships between capitalist and other non-capitalist forms of class relations and economy become constructed in ways that reflect differential power relations and this is of very direct relevance to the construction of GPNs.

Much recent literature in the 'new economic geography' (NEG) and cognate disciplines has emphasised the role of relations of trust, non-market institutions and untraded interdependencies (Storper, 1995) forged in civil society as well as in the economy itself as both helping constitute and

regulate the social relations of the contemporary economy, including those denoted by the concept of GPNs. The cultural and institutional 'turns' have placed heavy emphasis on such influences. There is no doubt that such influences can be significant in reproducing the social relations of the economy in particular times and places and in linking these places together as nodes in its constitutive circuits and GPNs. Equally, contra much of the recent NEG literature, I would argue that these influences are not new; indeed, they have been significant in the constitution of capitalist economies from the outset (for example, see Carney et al, 1977). What *is* new is the claim as to the discovery of their contemporary significance as part of a new form of capitalist socio-spatial organisation by proponents of the NEG (cf. Hall, 1991).

Alongside this, however, and in contrast to much recent literature, I argue that it is necessary to pay attention to the continuing role of the national state in shaping these circuits and networks and the ways in which they are reproduced, as well as giving due recognition to other regulatory mechanisms and processes. The increased regulatory significance of both sub-national states and transnational policy régimes is undeniable. However, national states help constitute these other scales of regulation and co-exist in complex relationships with them so that the architecture of regulation is much more nuanced, subtle and multi-scalar. Nonetheless, both directly and indirectly national states continue to play an important role in shaping a range of commodity markets, such as those for products, labour, and knowledge and so in shaping the spatiality of regulatory spaces. This is recognised in the varieties-of-capitalism literature and in the various strands of the regulationist approach (see Jessop and Sum, 2006), while at the same time acknowledging that the national cannot be a priori assumed to the main – or even less, the sole – scale of regulatory capacity. The point to emphasise is that while there has been growing regulatory influence at both sub-national and transnational scales, the (national) state continues to play a key role in ensuring that GPNs and the improbable processes of capital accumulation and the expanded reproduction of the circuit of capital are routinely made possible.

## Circuits of meaning, flows of knowledge: advertising, brands and the circulation of capital

The process of production within the circuit of industrial capital results in commodities that embody surplus-value – they embody more value than the commodities that were consumed in their production, precisely because of the unique attributes of the commodity labour-power and the fact that human labour creates more value than the value equivalent of the money received in the form of wages. However, until these commodities are sold, the value – to the capitalist – that they contain remains locked up, unavailable for further investment. For that value to be released in money form, so that it can again become money capital, the commodities must be sold. How and why should this happen?

To be sold, commodities must be seen to be useful to their purchasers – to have use value – and this in turn implies that they are seen as meaningful in the context of their life worlds. Such meanings may relate to strictly utilitarian aspects of commodities (for example, sheet steel purchased by automobile producers) or, increasingly in the case of final consumers, their affective dimensions and culturally-coded symbolic meanings. The sale of commodities thus depends upon flows of information from their producers to potential purchasers, both other companies (buying commodities as inputs to the production of other commodities) and purchasers of commodities for 'final' consumption (although in practice many consumer goods are then re-sold on to others by their initial purchasers or recipients). In the context of GPNs, this implies that knowledge about commodities flows globally and commodities come to have shared meanings for people in different parts of the world. In this global context, advertising plays a critical role in the production and dissemination of knowledge about commodities, the creation of conceptual spaces of meaning and sale, seeking to construct intended meanings for them in the eyes of potential purchasers and consumers. Often, however, these intended meanings are contested and challenged, creating instead unintended meanings as a result of consumer resistance and subversion. Producers may respond to this by changing the projected image of the product through advertising or materially alter the commodity that they are trying to sell (Hudson, 2005, Chapter 4).

While now central to the contemporary global economy and the reproduction of GPNs, it is only quite recently that advertising has been more than a marginal influence on patterns of sales and production (Williams, 1980, 177-86). The formation of modern advertising was intimately bound up with the emergence of new forms of monopoly capitalism around the end of the nineteenth and beginning of the twentieth century as one element in corporate strategies to create, organise and where possible control markets, especially for mass produced consumer goods. Mass production necessitated mass consumption, and this in turn required a certain homogenisation of consumer tastes for final products. At its limit, this involved seeking to create "world cultural convergence", to homogenise consumer tastes and engineer a "convergence of lifestyle, culture and behaviours among consumer segments across the world" (Robins, 1989, 23). The qualification "consumer segments" is crucial here for globalisation does not imply the elimination of variations in consumer preferences and lifestyles but rather the socio-spatial segmenting of markets across the globe.

The development of modern advertising drew heavily on psychological theories about how to create subjects, enabling advertising and marketing to take on a "more clearly psychological tinge" (Miller and Rose, 1997, cited in Thrift, 1999, 67). Increasingly, the emphasis in advertising has switched from providing "factual" information to the symbolic connotations of commodities, since the crucial cultural premise of advertising is that the material object being sold is never in itself enough. Even those commodities providing for the most mundane necessities of daily life must be imbued with symbolic qualities and culturally endowed meanings via the "magic system (Williams, 1980) of advertising. In this way and by altering the context in which advertisements

appear, things "can be made to mean 'just about anything'" (McFall, 2002, 162) and the "same" things can be endowed with different intended meanings for different individuals and groups of people, thereby offering mass produced visions of individualism. As such, representations of the consumer are a necessary component of the existence of markets. Consequently, contemporary capitalism could not function and GPNs could not exist as they do without advertising.

Consumers are susceptible to influence via advertising precisely because, as a result of their locations in specific socio-spatial-temporal structures, they have – and can *only* have - imperfect and partial knowledge of commodities and markets. This creates space for companies actively to seek to change or create consumer tastes and cultivate preferences for new products. Moreover, advertising practice "constantly problematises the entire notion of 'specific products' and constitutes a set of technologies for attempting both to de-stabilise markets and then to re-institutionalise them around new, strategically calculated product definitions". In an environment in which markets and products are "continuously and dynamically changing ... advertising focuses on exploiting these environmental conditions, creating variations between product concepts as a means to reconfigure both consumer demand and competitive market structures" (Slater, 2002, 68-73). This powerfully emphasises the way in which advertising practices and products can be central to the re-definition of markets via re-creating the intended meanings of commodities as advertising signs and symbols are progressively de-coupled from specific commodities and so to the prosecution of destabilising "market disturbing" strategies of strong Schumpeterian competition of the TNCs and MNCs that drive GPNs.

While there may well be limits to the de-coupling of brand logos and their meaning from specific commodities, as particular objects need to maintain a degree of stability of meaning in order that they can perform as commodities and so enable markets to be (re)produced (Hudson, 2004), the de-coupling of signs and symbols from any specific referent product has been further extended with the growing emphasis on the promotion of brands as opposed to advertising specific commodities. The increasing decoupling of signs and symbols from specific commodities has been a crucial move in the creation of global markets and GPNs. The increasing prevalence of "enormously powerful and ubiquitous global brands or logos" with a "fluid-like power" stems from the ways in which "the most successful corporations over the last two decades have shifted from the actual manufacture of products to become brand producers, with enormous marketing, design, sponsorship, public relations and advertising expenditures" (Urry, 2001, 2). While retaining their pivotal HQ, design and marketing functions in the core of the global economy, the production of material commodities and increasingly associated service functions has been shifted to new locations in the global economy (above all in the current decade, China and India). As such, it signals a major change in the character of contemporary accumulation and the spatiality of GPNs, but it is important to stress that the creation of brands is a well-established development across a wide spectrum of commodities. Brands typically are tied to specific proprietary markers, such as hieroglyphs or logos (for example, the curly script and

curvaceous bottle that encourage people al over the world to drink coca cola) or a particular person (such as David Beckham, Richard Branson, Venus Williams or Tiger Woods), which both distinguish the brand and define particular brand families (Klein, 2000) and can be recognised all around the globe. Such logos are deliberately targeted and intended to force the viewer, wherever and whoever they may be, to take notice of them, "to underscore the capacity of the brand to condense its message to its mark" (Franklin *et al*, 2000, 69). This capacity is partly a result of extensive processes of market research and promotion and of the ways in which the phatic inscriptions of the brand create and maintain links among product items, lines and assortments.

Proprietary markers for brands thus operate as phatic images (Virilio, 1991), images that target attention, synthesise perception. As a result, "the time of the brand is that of the instantaneity of recognition and thus discrimination: brands work through the immediacy of their recognisability" (Lury, 2000, 169). As a phatic image, the brand works to displace or de-contextualise bodily or biographical memory and re-contextualise it within its own body of expectations, understandings and associations, built up through market research, advertising, promotion, sponsorship and the use of themed retail space and manipulation of an object's environment or time/space context. As a result, brand owners frequently present branded objects in serially-repetitive themed spaces of exchange and sale - parks, restaurants, pubs and shops - or contribute to the elaboration of themed lifestyles through the sponsoring of events or activities. The result is that "these brands are free to soar, less as the dissemination of goods and services than as collective hallucinations" (Klein, 2000, 22). This creation of such distinct "(hallucinatory) spaces of brands" can extend across particular social strata scattered across the globe and exemplifies the dynamic dialectic between spaces and circuits of meanings as part of the process of (re)producing GPNs.

The significance of the brand as a phatic image is that it can, to an extent, "recoup the effects of the subject or consumer's perception as the outcome of its own powers through an assertion of its ability to motivate the product's meaning and use. This is achieved through the ways the brand operates to link the subject and object in novel ways, making available for appropriation aspects of the experience of product use *as if they were the properties of the brand*" " (Franklin *et al*, 2000, 68-9, emphases in original). More precisely, this is the intended way in which the potential purchaser should read the brand and be prepared to pay a premium for acquiring it. Purchasers who are able to thus pay for the brand name, the aesthetic meaning and cultural capital that this confers, rather than for the use value of the commodity per se. What matters is capacity to pay, irrespective of where in the world a person lives. These aesthetic and cultural meanings of brands and sub-brands then become ways of socio-spatially segmenting markets by ability to make the premium payments required to possess the desired brand. Successful global brands, such as Benetton, Bodyshop, Ford, Gap, Jurassic Park, Nike, McDonald's, Starbucks, Virgin, have become powerful precisely because they have succeeded in the creation of "family resemblances", a form of commodity kinship through which commodities become seen as sharing essential characteristics: "the shared substance of their brand identities" (Franklin *et al*, 2000, 69) thus becomes available to those who

can and are prepared to pay for the cachet of the brand, irrespective of where they happen to live around the globe. Global commodity flows are then shaped by the distribution of specific groups of consumers, whose tastes and preferences have in turn been shaped by the advertising strategies of the global corporations that produce those commodities, whose identities have been constructed around the consumption of particular goods and brands (Lash and Urry, 1994, 140-1). In strong opposition to those who argue the case for "consumer sovereignty", Williams (1980, 193) emphasises that "in economic terms, the fantasy operates to project the production decisions of the major corporations as 'your' choice, the 'consumer's selection of priorities, methods and style". With the development and global diffusion of the mass media, especially TV, advertising linked to the emergence of dominant brands has become a greatly enhanced "magic system" via more powerful and persuasive processes of sign production that penetrate into the day-to-day life-worlds and living spaces of people across the globe.

Others argue that such a perspective over-emphasises the power that advertisers, allied to retailers, can exert over consumers (Jackson, 1993). Advertising is rarely the sole or even most important source of pre-purchase knowledge about the existence or qualities of particular commodities, "seldom the single stimulator of wants and desires" (Pred, 1996, 13). According to Lash and Urry (1994, 277), consumers have become less susceptible to the illusions of mass consumption than was once the case. While true with respect to specific places and social groups, however, this is certainly not the case universally. They claim that people are increasingly reflexive about their society, its product and its images, "albeit images which are themselves part of what one might term a semiotic society". This raises critical questions as to *which* people have the capacity to become "active consumers". While this claim may have validity in some socio-spatial circumstances – for example, that fraction of the new middle class endowed with ample cultural capital and writing about itself? – there are evident dangers in over-generalisation here. There is, for example, little evidence of people becoming "active consumers" over much of marginalised places of Europe and North America, let alone sub-Saharan Africa, as different people, their life worlds and spaces are included in or excluded from GPNs.

To better appreciate the significance of processes of advertising and branding requires a more nuanced and non-linear view of the production and circulation of meanings as a continuous process. The starting point is the creation, within given social conditions, of a series of texts by producers, which are then read and interpreted by different audiences according to their social conditions, positionality and lived cultures. Audiences undertake the cultural work of interpretation and their culturally constructed knowledges therefore play a key role in the decoding and interpreting media messages and the ways in which adverts are understood. Such understandings, and the acceptance or contestation of messages, are likely to vary significantly between time/spaces and types of people. Moreover, this process of decoding is not simply a semiotic process; the uses to which people put things are a major factor in the determination of meaning. This work of interpretation can in turn give rise to recursive feedback loops from consumers to producers, and learning by

producers from consumers. Recognition that advertisements are 'read' in ways that are culturally constructed and vary over time/space and with the class, gender, ethnicity, age and so on of the 'reader', allows companies to use advertising strategies as a way of segmenting markets by seeking to create meanings that are specific to these segments. In this sense, advertising is an inherently spatial practice, creating and differentiating circuits and spaces of meaning as integral elements of GPNs.

This recognition of the socio-spatial segmentation of markets renders redundant conceptions of globalization that postulate the creation of a homogeneous global market. Indeed, they simply miss the point. One has only to consider the changes to the advertising strategies for Coca-Cola to appreciate this. After decades of a strategy based on the message of 'one sight, one sound, one sell', Coca Cola has sought to devise an advertising strategy that seeks to respond to local specificities and 'to make Coca Cola appeal to every type of consumer, of every culture and nation, on every occasion''(Mitchell, 1995, cited in Hudson, 2005). This exemplifies the way in which major multinationals are increasingly recognising the need to be aware of spatial differentiation in order to be successful globally and reproduce their GPNs. Increasingly they are devolving responsibility to local branches or agencies for creating adverts that are customised to local conditions – variations on a global theme, but tailor-made to fit local circumstances, increasingly multi-local rather than variations on a multinational theme. It is, however, important to recognise that these are very socio-spatially selective processes of inclusion in and exclusion from the spaces of GPNs.

Finally, while recognising that people can contest the intentions of advertisers, so that they "do not *straightforwardly* draw upon meanings prescribed by retailers and advertisers" but contest and re-work commodity meanings (Leslie and Reimer, 1999, 433, emphasis added), there are dangers in going too far in celebrating consumer autonomy, reflexivity and resistance. While the process may not be straightforward, advertising undoubtedly can exert enormous influence in mediating and shaping the changing relationship between the sign values of commodities, their symbolic meanings, and their material content and form (Fine and Leopold, 1993, 28). Most fundamentally, companies continue to realise surplus-value via the successful sale of commodities, suggesting that their advertising and brand strategies have considerable efficacy in relation to reproducing capital on an expanded scale and in reproducing GPNs.

## Material circuits, flows of matter

As noted above, there is recognition of the materiality of the economy in Marx's own writing and in subsequent Marxian political economy but, in contrast to analyses of issues such as the labour process, value creation and the circulation of capital, this has remained relatively underdeveloped. While cultural and semiotic issues have been much more thoroughly integrated via the development of CPE, allowing a more integrated treatment of issues of consumption, exchange and production, consideration of the economy in terms of materiality and flows of matter has remained largely conspicuous by

its absence. It is an absence that needs addressing, not least as it may well have implications for our understanding of processes of value creation and the creation of meanings.

Irrespective of the specific social relationships of a given economy, economic activity involves the application of human labour, deploying a variety of artefacts and tools, to transform and transport elements of nature to become socially useful and valued products. In emphasising the articulation of people with inanimate objects and tools to produce the materials transformations that give rise to material goods, there are clear resonances with the 'performativity programme' (Callon, 2006). Every economic activity – production, exchange, consumption – therefore necessarily involves material transformations, chemical and physical transformations of matter from one state to another but materials transformations that chronically exceed their intended effects, as unruly matter escapes the frame defined by a given transformative process. Consequently at every stage in the economy the transformation of materials has both intended and unintended – the latter often invisible or otherwise undetected as well as unwanted – effects. This leads to a conceptualisation of the economy as a complex socio-technical process with emergent effects, with important implications for a CPE perspective. Any production process in turn always depends upon a particular material configuration of the means of production, an assortment of tools, artefacts, machines and so on (that is, an assemblage, or ensemble, of fixed capital within the social relations of capital), itself the product of previous materials transformations, that both enables new forms of transformation and is itself continuously transformed by this process[4].

Recognising that the production of excess is a chronic feature of economies has important implications. Not least, we need to re-consider how we understand the category of ''waste' and the ways in which 'waste' is produced and this offers a productive route into consideration of the broader issue of the materiality of the economy and the material register of a CPE approach. Conventionally 'waste' is seen as the end-of pipe/end-of-process unwanted and unvalued product of a linear process. In contrast, the concept of 'waste' that emerges here is one of 'waste' as endemic and unavoidable, an unintended consequence of every stage in the economy, every material transformation. From the point of view of capital such wastes represent value lost and so there are pressing imperatives both to minimise waste production and to find new uses for such materials as do become wastes and to re-valorise them, so that materials that, from the perspective of one set of economic processes have become wastes, literally wasted, once again become sources of value.

A corollary of viewing the economy in this way is that the environmental footprint (Jackson, 1995) of a GPN or indeed any socio-spatial form of organising economic activity and its practices, its socio-ecological and socio-spatial distribution, is always a mixture of intended and unintended effects and

[4] There is a certain resemblance here to Sraffa's (1962) ideas as to the production of commodities by means of commodities but the point is that this applies to all forms of production, not just the commodity form.

attempts to ameliorate the undesirable effects of both. Consider for example the production of steel: as well as the desired product, this gives rise to waste gases produced from the blast furnaces and BOS steel shops; slag produced from blast furnaces; off-cuts of steel generated from the continuous casting machines and rolling mills; and so on. This in turn directs attention towards those practices that seek to reduce wastes by improving the efficiency of production processes, by re-cycling surplus at every stage in these processes (such as off-cuts of steel in steel mills), of finding ways of using wastes (such as using slag in construction), of finding new uses for products that have reached the end of their (original) socially useful life and so on. In this sense 'waste' is endemic but so too are strategies to seek to reduce it and re-valorise materials, in part for reasons of economic efficiency and competitiveness, in part because of ethical and moral concerns about waste in a society characterised by inequality and the ecological consequences of wastes. An important corollary of viewing wastes in these ways is that they and their effects become seen as endemic in the life-worlds of virtually everyone, and not simply in the life worlds of production in which they are created. Indeed, the consequences of wastes on the health and well-being of people, especially marginalised people in marginalised spaces as these become the destination of wastes produced elsewhere and/or the location of heavily polluting activities (such as nuclear waste reprocessing) is an issue of major significance as spaces of waste are created as an integral part of GPNs. As *any* form of production, transport and consumption has a varied environmental footprint, the issue is not whether or not GPNs have such an ecological footprint but rather what sort of footprint they have and what the socio-ecological and socio-spatial distribution of this footprint is. Such issues have yet to be integrated within a GPN perspective, however.

The proposition that the economy can be productively conceived in terms of materials transformations can be explored further via drawing upon conceptualisations of the economy in terms of flows of energy and chemical and physical transformations of elements of nature that leave an unavoidable trace, with the laws of thermodynamics providing key insights in understanding these processes of materials transformation. Crucially, thermodynamics characterises *any* material transformation as conservative of materials and dissipative of energy. The conservation of materials is further discussed below but it is important at this point to note the critical systemic implications of the second law and the dissipation of energy in relation to entropy. As a result there is a constant tendency to disorder in the universe. Whilst order can be preserved locally, for example within a given socio-ecological system, this is on the basis of imported flows of energy - ultimately from the sun but in relation to the contemporary socio-ecological system, on the basis of carbon-based sources of energy such as coal, oil and natural gas. Consuming such sources of energy, however, results in emissions of greenhouse gases that in turn pose a threat to the continuing viability of the system (see Hudson, 2001, Chapter 9). The limits that these laws unavoidably impose upon any form of economic activity at all scales are critical and in the context of *Global* Production Networks, linking diverse activities and locations around the globe, these limits may be particularly acute.

Each industrial process and economic activity *necessarily* involves the transformation of materials and energy from one form to another; this is an unavoidable truth. The laws of thermodynamics provide very specific rules and limits that govern these transformations; they cannot be altered or suspended by human intervention and in that sense set natural limits on social production and its relationships to nature (Georgescu-Roegen, 1971). Acknowledgement of such limits is, I would argue, a progressive move:" … in the face of realities which are genuinely invulnerable to human intentionality, adaptation by modifying or even abandoning our initial aspirations [to control nature] is to be recognised as a form of emancipation" (Benton, 1989, 58). The laws of thermodynamics state that energy is neither created nor destroyed during these transformations although it may change in physical form (for example, from kinetic energy to heat) and that the total mass of inputs to a transformation process is equal to the total mass of outputs. This identity also holds at the level of individual atomic elements during (non-nuclear) material transformations. Inputs that do not emerge as desired products therefore necessarily appear as unwanted by-products or wastes. Crucially, however, in contrast to linear conceptions of the economy which see 'wastes' as the end product of linear processes, in the perspective of a critical CPE 'wastes' are seen as created at each and every stage of a transformative process as this exceeds the capacity of the processes to contain them as intended, so creating an unwanted surplus. This in turn has implications for conceptualising the economy in terms of GPNs.

Furthermore, this focus upon the flow of materials and material transformations emphasises that the economy can be thought of as a (non-linear) sequence of configurations, each of which "is more or less a transient event, a temporary (possibly long-lived but temporary) use of some set of atoms and energy". Moreover, as Frosch (19, 159) puts it, neatly summarising a well-established set of concerns, "we can postulate a universe of material/energy paths through the production, life, and dissolution of any product or set of products. We can also consider each path to be a sequence of transformations from one material/energy embodiment to another. We can view the whole of material industry as a network of such paths and transformations, connected at each end (extraction of materials and disposal of products) to the environment external to the process and product and at places in the middle (disposal of incidental waste)". In referring to networks of paths and transformation, Frosch offers a perspective that seeks to emphasise the complexity of the economy and its grounding in continuous flows and transformations of matter. From this perspective, GPNs can be seen as a particular spatio-temporal 'fixing' of matter and material flows, held in place by socially specific regulatory practices.

This conception of economic practices as materials transformations in principle allows precise accounting of their environmental impacts. Consequently, it also provides the conceptual basis for industrial ecology and the methodologies of life cycle analysis and industrial metabolism that seek to construct a set of accounts that centre on the notion of mass balance - that is, that the sum total of a particular chemical within a production process remains constant as it passes from production, to consumption, to disposal, with the

social relations and institutions within which people behave providing the stabilising controls. However, while recognising the value of these methodologies as accounting frameworks and reminding us that there are chemical and physical limits to economic practices, my purpose in drawing upon them here is a different one; that is, to emphasise the ways in which matter changes state as it moves through the economy in flows that are socially shaped, with both intended and unintended effects. Once materials pass from one particular process, configuration and state, they simply re-enter the stream of the flow of matter until this flow is interrupted by their incorporation into another such socially-constructed process and their configuration in new ways – for example, in a new GPN. Moreover, the particular (bio)chemical and physical characteristics of particular configurations are crucial in shaping, if not quite determining, the possibilities for creating values. Consider, for example, the complex of materials flows and transformations within a major integrated chemicals complex and those within a clothing factory and the differing ways in which the characteristics of the varying materials and matter with which they work, their capacities and (chemical and physical) properties, influences the configurations into which they can be formed and held for varying periods of time and embody value, how they can be transformed into commodities for which markets can be created and the value embodied in them realised through sale. In terms of the relationships between processes of value creation and material flows and transformations, these specificities are therefore critical. Now of course capitalist production is an inherently speculative and risky activity, with all manner of possibilities of technical failure and breakdowns in the social relations of production within and between firms. As a result, there is no guarantee that commodity production will be successful and the circuit of capital completed – in that sense economies are always path contingent rather than path dependent (Hudson, 2004). But the point is that the very possibilities of specific sorts of commodity production – and particular forms of GPN - necessarily depend upon the sorts of materials configurations in which matter of particular sorts can be captured and held.

While it is the case that there is some attention paid to issues of materiality in the social sciences and this is valuable and informative, it is also the case that it is partial and limited. Material analysis in cultural anthropology and other parts of the social sciences is concerned with the meaning and representation of the material forms of artefacts, the ways they are represented and the meanings they come to have. This is fine as far as it goes but it remains focused upon issues of representation of the material form rather than addressing the dynamics of the flow of matter from one form to another. CPE to date likewise has little if anything to say on these issues and this forms a major limitation. In short, both CPE and existing approaches to material analysis in the social sciences focus on the moments of 'interruption' of the flows and the fixing of matter into temporary configurations and forms via the social processes of the economy in particular places (for example as commodities or other forms of material product), albeit in different ways[5].

[5] Nicky Gregson has suggested that this may be an overly-charitable interpretation of strands of cultural economy which simply take the process of 'fixing' for granted and focus upon the meaning of forms and things.

However, the laws of thermo-dynamics cannot be abolished or suspended by human intervention. Indeed, it is these that perhaps constitute the iron laws of the economy as a temporary 'interruption' of the continuous flow of matter. In this sense, focussing upon the materiality of the economy poses some interesting challenges and questions for those political economists for whom 'second nature has been taken-for-granted, an unquestioned given.

Emphasising the material register of a more comprehensive CPE therefore highlights the ways in which matter is conserved and energy dissipated during processes of transformation as they move through 'the economy', configuring matter in particular ways in the process of creating value. Conversely, the possibilities of value creation are in turn influenced by the chemical and physical properties of that matter. Focusing on the materiality of the economy highlights the point that wastes are endemic and as such represent value lost to capital - in turn offering possibilities of value creation if these waste materials can be configured in new ways to provide a new source of profit. In this way, we can obtain a deeper understanding of the relationships between processes of value creation and material transformation and the ways in which material possibilities and barriers influence the substance of commodity production[6]. By tracing the ecological impacts of varying combinations of technologies of production, exchange and consumption, and of different levels and compositions of output, the ecological implications of economic choices as to the composition of output and the socio-technical and socio-spatial configurations of various GPNs can be better understood. Equally the material effects of the devalorisation of capital and the creation of industrial wastelands, landscapes of abandoned factories, plant and machinery that then lie unused and decay, becoming transformed into new configurations of matter, can be better grasped and comprehended. This recognition of the significance of the material register therefore provides a perspective from which to review the ecological implications of the repertoire of possible social choices about how and what to produce, exchange and consume and where to do so. It allows fuller consideration of the determinants of where production occurs, for example in relation to companies' attempts to find "spatial fixes" for pollutant and environmentally noxious and hazardous production and, linked to this, to the creation of "regions of wastes", either regions that have always been on the margins of the global economy or those that were once central to it but no longer are, with such regions often in competition for the waged work that waste disposal offers. There are, therefore, considerable potential benefits in conceptualising economies in terms of materiality and materials transformation in thinking through different ways in which GPNs are currently organised and might in future be organised to ameliorate adverse ecological impacts as well as to deepening understanding of the links between processes of value creation and material transformation

In summary, human societies and economies, however organised and whether or not conceptualised as GPNs, cannot escape the indeterminacies,

[6] As noted above, for those who wish to pursue such an approach that focuses on material transformations per se, there are methodologies, notably those of industrial metabolism and life cycle analysis, that allow a precise tracing of processes of the dissipation of energy and conservation of matter.

uncertainties and limits set by the laws of thermodynamics. It is, however "quite another thing to treat [these laws] as sufficient conditions for the understanding of human history" (Harvey, 1996, 140). These laws set limits within which there is scope for varying determinations. There is a degree of room for manoeuvre within these limits, allowing GPNs to be shaped in one way or another, subject to the limits of political-economy and profitability. That said, these limits *are* non-trivial. Because the global ecological/economic system is complex and non-linear, its dynamic behaviour is potentially chaotic and its stability, its tendency to remain within its original domain is indeterminate. Given the indeterminacy, there are good reasons to exercise the precautionary principle in considering relations between economy and environment. However, it remains an open question as to whether *any* form of economy, *any* set of social relations of production, any socio-spatial configuration of a GPN, can develop effective regulatory mechanisms to contain the consequences of human intervention into the cycles of natural processes over the long-term.

## Conclusions

Has the meeting between GPN and CPE been fruitful? I would argue that it has. I have argued for a conception of CPE that encompasses a variety of circuits, flows and spaces within the three registers of the political-economic, semiotic and material. These co-constitutive circuits and flows intersect as people, things, and knowledge flow into and out of spaces, both shaped by and shaping these spaces, linking them together into the intricacies of GPNs, constituted in and of time/space. Thus GPNs could become an extremely powerful way of representing 'the economy' in its essential complexity (that is with emergent effects, an entity that is not just complicated but complex), of representing the richness of the economy in terms of the links between the affective, cognitive and material, between circuits of value, meaning and matter, between the moments of production, exchange and consumption, and between political economies grounded in different concepts of value and processes of valuation. In particular GPNs highlight the particular spatialities of the global economy and the way in which different spaces and the everyday lives of those that live and work in them are entangled with or excluded from the processes of production, exchange and consumption through which GPNs are constituted. As a result, they bring together the "system–world" and the "life world", the imperatives of the accumulation process with the experienced realities of everyday life for people in varied sites of production, exchange and consumption.

However, consideration of the material and of the materiality of the economy, of the relationships between economy and nature, has yet to be fully brought into a CPE perspective. It remains an open question as to the extent to which serious consideration of materiality forces a re-interpretation of issues of value and meaning within a CPE perspective and the implications of this in turn for bringing together CPE and GPN perspectives. Not least taking materiality seriously requires crossing disciplinary boundaries not simply within the social sciences but between the social and material and physical sciences, with all that this implies about different conceptions as to what constitutes valid knowledge and admissible evidence. As of now the GPN perspective gives

minimal attention to the materiality of networks and to the material transformations that are, in practice, central to the constitution of GPNs. There is no doubt, however, that the material configurations in which matter can be temporarily stabilised and held has important implications for the way in which matter can be shaped to create value. Materialising GPN approaches therefore presents a significant challenge to its advocates and proponents – but also a significant opportunity to broaden the agenda of this exciting new way of thinking about economic geographies.

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## ABSTRACT

In this paper, I explore some of the implications of pursuing a cultural political economy (CPE) approach to the analysis of GPNs, This raises three sets of issues: the current state of knowledge about GPNs; the current state of knowledge about CPE; and the current state of relationships between analyses of GPNs and CPE. GPNs can be seen as encompassing the entirety of the circuit of production and to be constituted via a variety of flows (of capital in various forms such as commodities and money, knowledge and people) between a variety of nodes, sites and spaces (of production, exchange and consumption), with varying governance arrangements, both multi-scalar (supra-national, national, regional and urban) and non-scalar networked forms of governance. As these are *Global* Production Networks these nodes and the flows linking them are, by definition, distributed around the globe, albeit unevenly. CPE seeks to conjoin a more thorough treatment of the semiotic to more established concepts of political-economy and there has been some considerable success in this regard (for example see Jessop and Sum, 2006), As yet, however, there has been little serious engagement with the materiality of the economy and so with the relations between the material, semiotic and political-economic within CPE. A similar criticism can be made of work on GPNs. Integrating considerations of the materiality of the economy more systematically enriches a CPE perspective, while exploring common ground between CPE and GPN approaches enables these advantages to be translated into the latter and further enhance its conceptual reach.